"Western Treasure -- Deep, Wet Snow"

FEDERAL-STATE COOPERATIVE SNOW SURVEYS AND IRRIGATION WATER FORECASTS

FOR OREGON

MARCH 1, 1948

By

Division of Irrigation, Soil Conservation Service
United States Department of Agriculture
and
Oregon Agricultural Experiment Station

Data included in this report were obtained by the agencies named above in cooperation with the Oregon State Engineer, U. S. Forest Service, National Park Service and other Federal, State and local organizations.

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OREGON

Report Prepared

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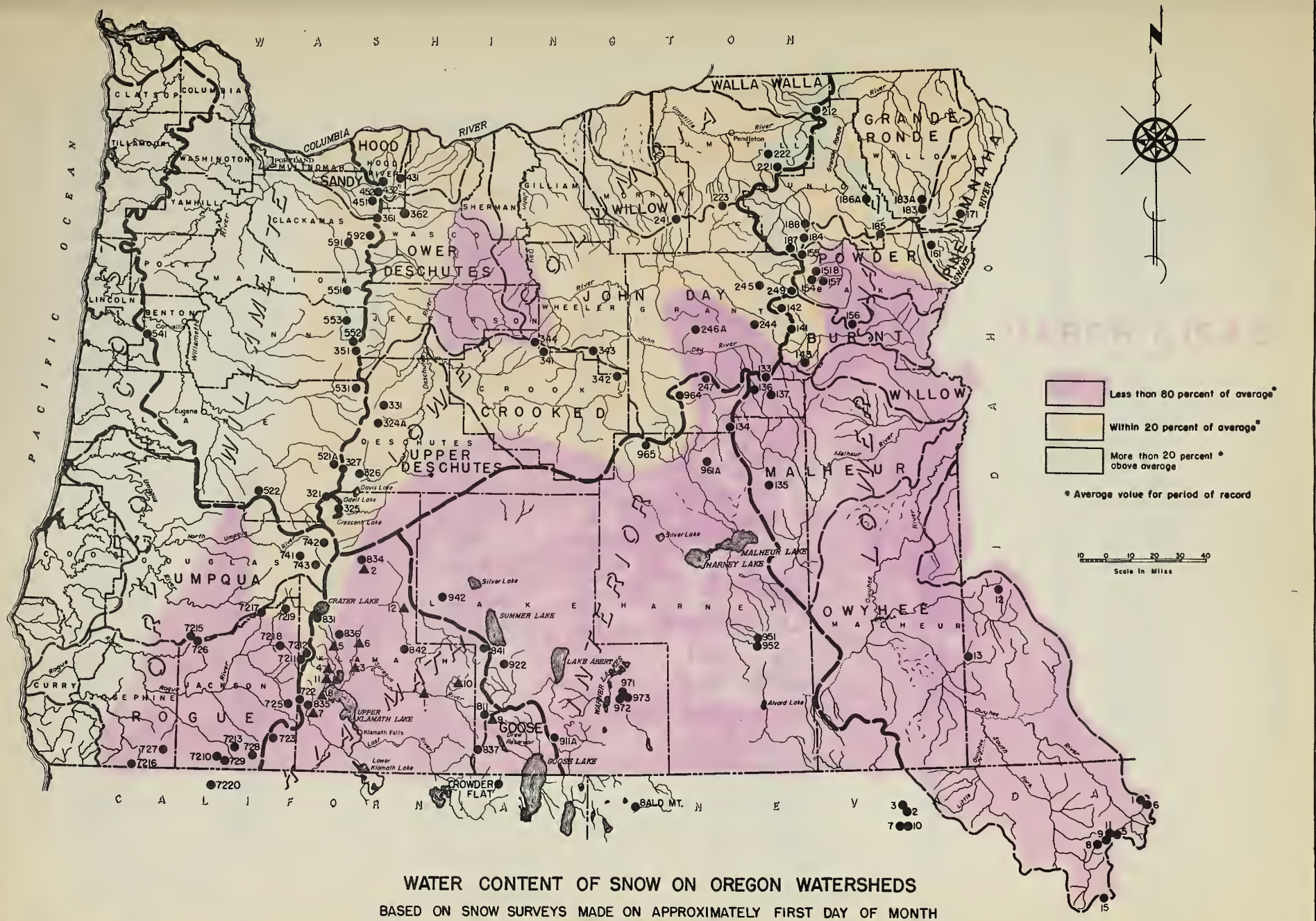

WATER CONTENT OF SNOW ON OREGON WATERSHEDS

BASED ON SNOW SURVEYS MADE ON APPROXIMATELY FIRST DAY OF MONTH

(Valley Lands Not Necessarily Included)

INDEX TO SNOW COURSES

Number	Name	Elev.
	UPPER DOLUMBIA DRAINACE Lower Snake in Oregon	
	OWYHEE RIVER	
Nev.1	Big Bend	6800
Nev.2	Buckskin, Lower	6800
Nev.3	Buckskin, Upper	8200
952	Fish Creek	7900
Nev.5	Fry Canyon	6800
Nev.6	Gold Creek Ranger Sta.	6600
Nev.7	Granite Peak	8600
Nev.8	Jack Creek, Lower	7000
Nev.9	Jack Creek, Upper	7800
Nev.10	Martin Creek	7000
Nev.11	Rodeo Flat	7000
Ida.12	Silver City	6400
951	Silvies	6900
Ida.13	South Mountain No.22	6340
Nev.15	Taylor Canyon	5200
	MALHEUR RIVER	
133	Blue Mountain Spring	5900
137	Crane Prairie	5375
136	Lake Creek	5120
134	Rock Spring	5100
135	Stinking Water	4800
	BURNT RIVER	
143	Barney Creek	5950
141	Blue Mountain Summit	5098
156	Dooley Mountain	5430
142	Tipton	5100
	POWDER RIVER	
155	Anthony Lake	7125
154	Bourne	5800
156	Dooley Mountain	5430
151B	Eilertson Meadows	5400
249	Gold Center	5340
157	Coodrich Lake	6775
184	Summit Springs	6000
185	Taylor Creen	5740
	PINE CREEK	
161	Schneider Meadows	5400
	INNAHA RIVER	
171	Coverdale	4250
	GRANDE RONDE RIVER	
183	Aneroid Lake	7480
183A	Aneroid Lake No. 2	7000
155	Anthony Lake	7125
188	Beaver Reservoir	5340
187	Camp Carson	5970
186A	Moss Spring	5850
184	Summit Springs	6000
185	Taylor Green	5740
212	Tollgate	5070

Number	Name	Elev.
	LOWER COLUMBIA DRAINACE	
	WALLA WALLA RIVER	
212	Tollgate	5070
	UMATILLA RIVER	
222	Emigrant Springs	3925
223	Lucky Strike	5050
221	Meacham	43800
212	Tollgate	5070
	WILLOW CREEK	
241	Arbuckle Mountain	5400
	JOHN DAY RIVER	
241	Arbuckle Mountain	5400
246A	Beech Creek Summit	4800
133	Blue Mountain Spring	5900
141	Blue Mountain Summit	5098
244	Dixie Springs	6650
249	Cold Center	5340
964	Izee Summit	5293
245	Olive Lake	6000
965	Snow Mountain	6300
247B	Starr Ridge	5150
	DESCHUTES RIVER	
326	Caldwell Ranch	4400
321	Cascade Summit	4880
327	Charlton Lake	5750
361	Clear Lake	3500
325	Crescent Lake	4760
343	Derr	5670
351	Hogg Pass	4755
344	Marks Creek	4540
324A	New Dutchman Flat	6400
341	Oohoo Meadows	5200
362	Rock Creek	4200
965	Snow Mountain	6300
342	Tamarack	4800
331	Three Creeks Meadows	5600
	HOOD RIVER	
431	Brooks Meadows	4300
432	Tilly Jane-Mt. Hood	6000
	SANDY RIVER	
361	Clear Lake	3500
452	Phlox Point-Mt. Hood	5600
451	Still Creek	3700
	CLACKAMAS RIVER	
592	Clackamas Lake	3400
591	Peavine Ridge	3500

Number	Name	Elev.
	WILLAMETTE RIVER	
551	Breitenbush	2325
321	Cascade Summit	4880
522	Champion	4500
327	Charlton Lake	5750
351	Hogg Pass	4755
531	McKenzie	4800
553	Marion Forks	2730
541	Mary's Peak	3620
552	Santiam Junction	3990
521A	Waldo Lake	5500
	KLAMATH LAKE BASIN	
831	Annie Spring	6018
722	Billie Creek Divide	6000
834	Chemult No. 1	4760
Calif.	Crowder Flat	5200
723	Hyatt Prairie Reservoir	4900
835	Lake of the Woods No. 1	4960
811	Quartz Mountain	5320
7211	Seven Lakes No. 1	6800
7212	Seven Lakes No. 2	6200
837	Strawberry	5600
841	Summer Rim	7200
836	Sun Mountain	5350
842	Taylor Butte	5100
	GOOSE LAKE BASIN	
911A	Camas Creek	5720
811	Quartz Mountain	5320
837	Strawberry	5600

INDEX TO THE CALIFORNIA OREGON POWER COMPANY SNOW WATER STATIONS

	KLAMATH LAKE BASIN	
1	Beatty	4300
2	Chemult	4761
3	Chiloquin	4187
4	Crystal	4200
5	Fort Klamath	4150
6	Kirk	4533
7	Lake of the Woods	4960
8	Pelican	4200
9	Quartz Mountain	5504
10	Richardson Ranch	4800
12	Yamsey	4600
	GOOSE LAKE BASIN	
9	Quartz Mountain	5504

Number	Name	Elev.
	INTERIOR DRAINAGE	
	SILVER LAKE	
942	Silver Creek	4900
	CHEWAUGAN RIVER	
922	Mill Creek	6200
	HARNEY BASIN	
973	Deer Creek	6670
952	Fish Creek	7900
971	Hart Mountain	6350
961A	Idylwild Park	5200
964	Izee Summit	5293
134	Rock Spring	5100
951	Silvies	6900
965	Snow Mountain	6300
247B	Starr Ridge	5150
	WARNER LAKE	
911A	Camas Creek	5720
	CUANO LAKE	
Nev.	Bald Mountain	6720
972	Cuano Creek	6480
	WEST COAST DRAINACE	
	UMPQUA RIVER	
522	Champion	4500
743	Diamond Lake	5315
726	Goolaway Gap	3000
7215	Coolaway Mountain	3730
742	N.Umpqua near Lake Creek	4215
741	Trap Creek	3800
7217	Whaleback	5140
	ROGUE RIVER	
7216	Althouse	4400
831	Annie Spring	6018
729	Big Red Mountain	6500
722	Billie Creek Divide	6000
725	Fish Lake	4865
726	Coolaway Gap	3000
7215	Coolaway Mountain	3730
727	Crayback Peak	6000
723	Hyatt Prairie Reservoir	4900
7210	Little Red Mountain	6500
7220	Scragg Mountain	6200
7211	Seven Lakes No. 1	6800
7212	Seven Lakes No. 2	6200
7219	Silver Burn	3720
728	Siskiyou Summit	4630
7218	South Fork Canal	3500
7213	Wagner Butte	6900
7217	Whaleback	5140

March 1, 1948

PRELIMINARY WATER SUPPLY OUTLOOK

The outlook for Oregon's 1948 water supplies has improved slightly with heavy snowfall during February. Irrigated lands of the state will have "good" to critically short water supplies.

Water content of the Mountain snow cover, as of March 1, is still below average on 70 percent of all measured snow courses, but has improved this past month with 84 percent of the measurements now better than in 1947. Measured snow-water is still less than in the bountiful year of 1946 on 94 percent of all snow courses. Water content of the snow at elevations above 5000 feet is now 88 percent of average and between 2000 and 5000 feet, it has increased to 86 percent of average. Considerably above normal accumulation of snow must occur during March if all irrigated lands are to have sufficient supplies.

Total water stored in all reservoirs is 18 percent less than at this date last year, 22 percent less than in 1946, 11 percent less than in 1945 and is 18 percent less than average. Only 38 percent of important Oregon reservoirs are half full or better. Storage is definitely short in Warm Springs, Fourmile Lake and Hyatt Prairie Reservoirs.

Watershed soils are well saturated under the snow mantle and mostly not frozen, thus favoring a well sustained runoff from the spring snow pack. Snow densities are among the highest of record.

Preliminary forecasts of April-September stream flow, based on existing mountain snow cover, and on the assumption that snow cover increase during March will be average, are listed on page 2 of this report. Final 1948 snow surveys and forecasts will be published on the 9th of April.

PRELIMINARY STREAMFLOW FORECASTS, March 1, 1948

The following preliminary runoff forecasts are based on present mountain snow cover and on the assumption that average increase of snow cover will occur during March. Greater or less than average increase in mountain snow cover during March will correspondingly modify these estimates:

BASIN AND STREAM	Apr.-Sept., inc. Streamflow in Thous. A.F.				
	Forecast	Measured Runoff			10-yr. avg.
	1948	1947	1946	1945	1937-46
NORTHCENTRAL OREGON					
Hood River, West Fork near Dee	160.0	a	164.7	149.8	137.1
UMATILLA-WALLA WALLA					
Umatilla River at Pendleton	160.0	a	194.0	188.7	153.9
Walla Walla River, S.Fork near Milton	73.0	a	75.0	69.8	62.7
NORTHEASTERN OREGON					
Wallowa R., E.Fk. and Power Plant	10.5	a	13.3	10.9	10.7
Hurricane Cr. near Joseph	42.0	a	54.3	41.8	41.1
Lostine River near Lostine	112.0	a	149.7	125.6	113.8
Bear Creek near Wallowa	57.0	a	83.4	65.5	63.6
Grande Ronde River near LaGrande	165.0	a	179.6	168.4	155.8
EASTERN OREGON					
Strawberry Creek near Prairie City	5.6	a	9.9	8.0	7.8
Malheur R., Mid.Fk. near Drewsey	28.0	34.1	83.6	80.4	75.7
Malheur R., N.Fk., at Beulah	26.0	a	68.9	53.6	60.2
HARNEY BASIN					
Silvies River, near Burns	30.0	47.7	99.6	98.6	88.4
CENTRAL OREGON					
Ochoco Reservoir Net Inflow	9.5	a	46.4	29.6	21.4
Crescent Lake Net Inflow	10.0	19.2	22.2	11.1	13.2
Odell Creek near Crescent	26.0	a	32.6	24.1	24.8
Tumalo Creek and Col.So.Canal	38.0	a	60.9	38.5	42.8
Squaw Creek near Sisters	42.0	45.7	63.5	38.4	44.9
SOUTHCENTRAL OREGON					
Deep Creek above Adel	25.0[b]	a	57.6[b]	70.2[b]	61.3[b]
KLAMATH BASIN					
Upper Klamath Lake Net Inflow	338.0	318.2	557.0	409.9	495.2
SOUTHERN OREGON					
Hyatt Prairie Reservoir Net Inflow	3.5	a	5.5	5.8	5.8
Fourmile Lake Net Inflow	5.7	a	8.7	7.3	6.9
Little Butte Creek, N.Fk., below Fish Lake (Natural Flow)	12.0	a	15.7	13.8	13.4
Rogue River N.Fk. above Prospect	295.0	a	370.4	295.4	293.4
Clearwater River above Trap Creek	58.0	a	65.7	55.5	57.6
No. Umpqua River below Lake Creek	150.0	a	178.0	148.6	147.6
No. Umpqua River at Toketee Falls	360.0	a	407.3	348.1	341.7
WILLAMETTE VALLEY					
Willamette River Mid.Fk. at Eula	700.0	a	830.3	889.2	749.5
McKenzie River at McKenzie Bridge	500.0	a	595.2	533.9	516.4
McKenzie River at Vida	1000.0	a	1227.8	1230.8	1107.8

a. 1947 Discharge record not available.
b. April-June rather than April-Sept.

COMPARISON OF SNOW COVER AS OF MARCH FIRST WITH THAT OF PREVIOUS YEARS

Snow-stored water now present above 5,000 feet:

As percent of that present one month ago	--	148
As percent of that present one year ago	--	120
As percent of that present two years ago	--	63
As percent of average	--	88

Snow-stored water now present from 2,000-5,000 feet:

As percent of that present one month ago	--	173
As percent of that present one year ago	--	184
As percent of that present two years ago	--	51
As percent of average	--	86

Snow water content on 84 percent of all measured courses is greater than at this time in 1947, and in 94 percent of the comparisons is less than on about March 1 of 1946. Snow water content on 70 percent of all measured courses is less than average for the period of record.

Given below is a tabulation showing inches snow-stored water for the March 1 record period on thirteen scattered snow courses.

Water Content of Snow (Inches) as of About March 1, 1948

Stream Basin	Clackamas	Grande Ronde	Powder	John Day-Burnt	John Day-Malheur	Crooked	Owyhee	Harney	Walla Walla	Klam.-Desch.	Klam.-Rogue	Klam.-Rogue	Rogue Umpqua
Snow Course / Year	Peavine Ridge	Moss Spring	Eilertson Meadows	Blue Mountain Summit	Blue Mountain Springs	Ochoco Meadows	Granite Peak	Izee Summit	Tollgate	Chemult	Billie Creek	Annie Spring	Diam. Lake
1929										5.8*			12.6*
1930										1.4*	6.4	22.7	5.0*
1931										7.8*	12.8	22.1	7.8*
1932							16.5			11.9*	32.2	N.R.	15.4*
1933							7.4			12.0*	30.9	N.R.	27.0*
1934						0.0	7.2			0.0*	N.R.	N.R.	5.4*
1935			7.3			N.R.	11.8			7.6*	N.R.	N.R.	8.6*
1936			N.R.	10.5	18.6	N.R.	13.5	11.0		12.5*	36.3	52.1	17.6*
1937			N.R.	9.3	15.3	13.6	7.9	8.3		11.0	27.4	37.8	21.2
1938	13.0	19.6	11.5	6.7	19.0	10.0	13.5	6.7		12.5	18.4	41.6	18.2
1939	19.2	N.R.	15.1	9.2	13.9	9.6	12.8	9.1	34.6	8.7	27.3	34.0	18.2
1940	7.6	18.0	13.2	5.4	10.3	8.0	15.0	5.2	18.1	8.0	10.3	38.0	9.6
1941	4.3	16.9	10.6	8.1	14.0	9.8	15.7	7.7	15.6	8.4	13.5	39.9	12.8
1942	8.9	13.9	9.1	9.3	12.8	11.6	13.7	8.8	14.1	10.2	18.0	30.0	14.6
1943	28.2	32.1	17.8	13.4	23.0	14.8	18.9	12.3	31.9	21.4	31.9	46.3	32.9
1944	7.3	13.5	5.2	4.6	7.4	6.1	7.4	6.1	19.9	6.1	15.5	21.7	10.6
1945	6.8	16.8	7.0	7.3	10.4	8.2	11.4	5.8	15.3	5.1	15.2	24.2	9.7
1946	19.5	24.1	15.6	12.3	19.6	14.6	13.0	9.7	35.5	17.6	29.9	63.2	31.8
1947	8.5	19.0	3.6	5.2	10.4	3.2	6.8	3.2	19.4	3.3	12.1	29.8	10.1
1948	13.0	26.4	8.3	8.1	11.3	9.1	6.4	7.1	28.6	5.6	20.2	33.2	21.9

Underscored is least March 1 water content of snow of record period for each snow course shown.

* From COPCO Water Station. N.R. - No report.

STATUS OF SNOW COVER AS OF MARCH FIRST
Summary of Snow Survey Data
By Watersheds as of About March First

Stream Basin	Number Of Snow Courses Averaged	Average Water Depth in Snow Cover (Inches) 1948	1947	1946	Avg. Past Yrs. of Record	Yrs. of Record	1948 Snow Water Depth (Inches) as Percent of that in 1947	1946	Avg.
Owyhee River	10	5.5	4.1				134		
	12	5.9		8.8				67	
	12	5.9			8.7	(8-17)			68
Malheur River	5	7.1	6.1				116		
	5	7.1		13.2				54	
	5	7.1			9.6	(3-12)			74
Burnt River	4	7.7	5.8				133		
	4	7.7		13.2				58	
	4	7.7			8.6	(3-12)			90
Powder River	5	14.3	11.2				128		
	2	7.4		13.8				54	
	4	9.6			11.0	(8-11)			87
Grande Ronde River	6	21.4	17.8				120		
	6	21.4		25.3				84	
	6	21.4			18.0	(4-11)			119
Walla Walla River	1	28.6	19.4				147		
	1	28.6		35.5				80	
	1	28.6			22.7	(9)			126
Umatilla River	4	14.4	8.1				178		
	4	14.4		19.3				75	
	4	14.4			12.3	(9-11)			117
John Day River	8	10.4	7.2				144		
	7	10.2		13.6				75	
	8	10.4			9.9	(4-12)			105
Deschutes River	3	13.5	15.3				121		
	4	20.0		31.2				64	
	4	20.0			18.1	(3-7)			110
Crooked River	3	5.6	1.6				350		
	3	5.6		10.1				55	
	3	5.6			6.3	(5-12)			89
Sandy River	3	25.4	25.0				102		
	3	25.4		41.8				61	
	3	25.4			22.6	(6-10)			112

(Continued)

Stream Basin	Number of Snow Courses Averaged	Average Water Depth in Snow Cover (Inches) 1948	1947	1946	Avg. Past Yrs. of Record	Yrs. of Record	1948 Snow Water Depth (Inches) as Percent of 1947	that in 1946	Avg.
Clackamas River	1	13.0	8.5				153		
	2	11.2		17.6				64	
	2	11.2			11.7	(7-10)			96
Willamette River	5	17.3	12.1				143		
	6	18.5		30.6				60	
	6	18.5			16.5	(3-9)			112
Chewaucan River	1	2.9	3.9				74		
	1	2.9		9.6				30	
	1	2.9			6.4	(9)			45
Harney Basin	7	4.6	2.8				164		
	7	4.6		8.5				54	
	7	4.6			6.7	(4-12)			69
Silver Lake Basin	1	0.0	0.0				0		
	1	0.0		4.1				0	
	1	0.0			3.0	(8)			0
Warner Lake	1	4.6	3.0				153		
	1	4.6		13.0				35	
	1	4.6			8.1	(4)			57
Guano Lake	2	0.6	0.6				100		
	2	0.6		5.4				11	
	2	0.6			5.2	(7-8)			12
Umpqua River	2	20.8	8.0				260		
	2	20.8		33.5				62	
	2	20.8			16.6	(9-19)			125
Upper Rogue River	9	14.2	11.0				129		
	9	14.2		25.8				55	
	9	14.2			17.8	(4-16)			80
Applegate River	3	12.2	8.9				137		
	2	11.7		17.6				66	
	3	12.2			16.1	(6-10)			76
Illinois River	2	5.4	2.0				270		
	2	5.4		12.7				42	
	2	5.4			9.6	(6-9)			56
Klamath Lake Basin	17*	8.2	6.7				122		
	16*	8.2		19.0				43	
	17*	8.2			12.0	(4-21)			65
Goose Lake Basin	3*	2.6	1.0				260		
	3*	2.6		11.0				24	
	3*	2.6			6.9	(4-17)			38

*Including Copco water measurement stations.

STATUS OF RESERVOIR STORAGE, March 1, 1948

BASIN AND STREAM	RESERVOIR	USEABLE CAPACITY (Thous.A.F.)	THOUS.A.F. IN STORAGE ABOUT MARCH 1. 1948	1947	1946	1945	10-yr. avg. 1937-46
		UPPER COLUMBIA DRAINAGE LOWER SNAKE IN OREGON					
Owyhee	Antelope	36.5	7.0	6.6	11.1	12.7	9.6
	Owyhee	715.0	349.1	541.6	601.7	501.2	558.4
Malheur	Warm Springs	191.0	33.6	121.2	90.8	65.6	102.7
	Agency Valley	60.0	40.5	43.3	43.4	50.2	40.7
Burnt	Unity	25.2	7.8	11.9	11.8	11.7	9.6[d]
Powder	Thief Valley	17.4	17.4	17.4	17.4	17.4	14.6
Grande Ronde	Wallowa Lake	40.9	17.6	25.4	11.2	9.8	19.3
		LOWER COLUMBIA DRAINAGE					
Umatilla	McKay	74.0	66.6	56.7	44.5	39.5	38.2
	Cold Springs	50.0	45.6	43.3	42.0	28.1	37.0
Deschutes	Ochoco	46.0	21.6	26.2	34.6	4.5	16.9
	Crescent Lake	80.0	47.0	50.1	32.3	33.3	34.8
	Crane Prairie	50.0	40.1	40.6	39.3	27.1	33.8
	Wickiup	180.0	134.6	86.6	55.3	54.3	28.5[d]
Willamette	Cottage Grove	30.1[b]	9.2	6.0	9.0	7.0	7.3[e]
	Fern Ridge	94.2[b]	38.2	26.0	24.0	24.0	25.6[g]
		WEST COAST DRAINAGE					
Rogue	Fish Lake[a]	7.7	3.4	4.3	3.9	3.7	4.7
	Fourmile Lake	16.0	2.3	4.8	5.0	7.9	7.4
	Emigrant Gap	8.2	8.2	4.9	8.2	4.8	5.8
	Hyatt Prairie[a]	16.0	3.1	2.8	3.0	3.1	6.0
Klamath	Upper Klamath	584.0[c]	314.4	324.1	401.1	302.7	398.2
	Gerber	94.0	23.2	36.8	23.2	52.2	40.2
	Clear Lake	440.2	146.7	211.3	244.1	279.7	224.2
Goose Lake	Cottonwood	4.1	0.3	0.8	0.0	1.4	0.6[f]
	Drew	62.5	25.0	27.4	46.3	41.0	39.6

N.R. - No Report
a - By ditch to Rogue River side from Klamath drainage
b - Storage space reserved for flood control
c - Based on gage zero elevation of 4135.0
d - 1938-1946
e - 1943-1946
f - Excl. '38, '42
g - 1942-1946

VALLEY PRECIPITATION[a]

DIVISION	CURRENT YEAR Oct. 1, 1947 - March 1, 1948		LAST YEAR Oct. 1, 1946 - March 1, 1947	
	P	D	P	D
Southeastern	3.8	-1.2	4.40	-0.79
Southcentral	7.6	-1.5	7.15	-2.28
Northcentral	8.7	+1.9	5.90	-1.14
Columbia River	9.9	+2.4	5.39	-2.11
Wallowa Mountains	7.6	-0.3	6.77	-0.88
Blue Mountains	10.4	+1.3	9.73	-0.28
Southern	16.8	+1.0	12.75	-3.06
Willamette Valley	41.4	+6.7	35.10	+0.53

P = Inches Precipitation D = Inches Departure from Normal

Southeastern: Southeastern Oregon range lands, Harney and Malheur Counties.

Southcentral: Southcentral Oregon range lands, Lake County and Klamath County, except the Cascade Mountains.

Northcentral: Northcentral Oregon wheat and range lands, Crook, Deschutes, Jefferson, Wheeler and part of Grant Counties.

Columbia River: Columbia River area, wheat and range lands, Gilliam, Morrow, Sherman, Wasco, and part of Umatilla Counties.

Wallowa Mountains: Wallowa Mountain area, forest and range lands, Wallowa and part of Baker County.

Blue Mountains: Blue Mountain forest and range lands, Union and parts of Baker, Grant and Umatilla Counties.

Southern: Southern Oregon irrigated section, Jackson and Josephine Counties.

Willamette Valley: Parts of Polk, Benton, Yamhill, Washington, and Lane; all of Linn, Marion, Clackamas and Multnomah Counties.

a - Data furnished by U. S. Weather Bureau

DRAINAGE BASIN and SNOW COURSE	LOCATION					SNOW COVER MEASUREMENTS						
								Water Content (In.)			Past Record	
									Same Approx. Date			
	Number or State	Sec.	Twp.	Range	Elev.	Date of Survey	Snow Depth (In.)	1948	1947	1946	Years of Record	Av. Water Content (Inches)
UPPER COLUMBIA DRAINAGE												
LOWER SNAKE IN OREGON												
OWYHEE RIVER												
Big Bend	Nev.	30	45N	56E	6800	2-29	24.2	6.3*	5.3	10.1	16	9.4
Fry Canyon	Nev.	32	43N	54E	6800	3-1	16.3	5.0*	4.3	8.8	14	9.1
Gold Creek Ranger St.	Nev.	32	45N	56E	6600	2-29	13.9	4.9*	3.9	7.3	16	6.6
Granite Peak	Nev.	27	44N	39E	8600	2-28	18.7	6.4*	6.8	12.9	16	12.2
Lower Buckskin	Nev.	25	45N	39E	6800	2-27	21.7	7.8*	-	7.1	14	8.2
Lower Jack Creek	Nev.	19	42N	53E	7000	3-2	10.9	2.8*	1.2	5.2	17	4.9
Martin Creek	Nev.	24	44N	39E	7000	2-28	18.1	6.8*	3.8	6.7	16	6.9
Mary's River	Nev.	4	44N	58E	8000	No Report			9.2*	-	9	16.9
Midas	Nev.	18	39N	46E	7200	No Report			-	5.2	7	7.1
Rodeo Flat	Nev.	31	43N	54E	7000	3-1	19.4	6.2*	4.7	9.5	14	10.0
South Mountain #2	Idaho	35	7S	5W	6340	3-1	20.2	7.8	5.4	15.1	8	11.1
Taylor Canyon	Nev.	32	39N	53E	5200	3-2	4.8	1.3*	0.5	6.7	13	6.0
Tremewan Ranch	Nev.	4	29N	55E	5600	No Report			0.0	2.5	16	2.8
Upper Buckskin	Nev.	14	45N	39E	8200	2-26	21.5	8.2*	-	6.4	14	9.9
Upper Jack Creek	Nev.	9	42N	53E	7800	3-2	33.8	7.3*	5.2	9.7	12	9.8
MALHEUR RIVER												
Barney Creek	143	16	14S	36E	5950	2-27	21.5	6.0	6.7	10.8	3	7.4
Blue Mountain Spring	133	21	15S	35E	5900	2-26	36.7	11.3	10.4	19.6	12	14.6
Crane Prairie	137	24	16S	34E	5375	2-26	22.4	6.7	5.8	12.8	9	9.0
Lake Creek	136	10	16S	33½E	5120	2-25	25.5	7.6	5.5	14.6	9	10.3
Rock Spring	134	23	18S	32E	5100	2-28	12.8	4.1	2.0	8.0	12	6.6
Stinkingwater	135	33	21S	34E	4800	No Report			0.0	6.2	10	4.2

*Telegraphic - Subject to minor revision.

OREGON SNOW SURVEYS, MARCH, 1948

DRAINAGE BASIN and SNOW COURSE	LOCATION					SNOW COVER MEASUREMENTS						
								Water content (In.)			Past Record	
	Number or State	Sec.	Twp.	Range	Elev.	Date of Survey	Snow Depth (In.)	1948	Same Approx. Date 1947	Same Approx. Date 1946	Years of Record	Av. Water Content (Inches)
BURNT RIVER												
Barney Creek	143	16	14S	36E	5950	2-27	21.5	6.0	6.7	10.8	3	7.4
Blue Mountain Summit	141	6	12S	36E	5098	2-27	25.3	8.1	5.2	12.3	12	8.4
Dooley Mountain	156	32	11S	40E	5430	3-1	21.4	6.6	3.8	12.1	9	8.8
Tipton	142	34	10S	35½E	5100	3-3	28.7	10.2	7.7	17.6	5	9.8
POWDER RIVER												
Anthony Lake	155	18	7S	37E	7125	No Report			28.8	31.8	8	22.7
Bourne	154	33	8S	37E	5800	2-28	40.2	11.8	11.2	-	11	13.5
Dooley Mountain	156	32	11S	40E	5430	3-1	21.4	6.6	3.8	12.1	9	8.8
Eilertson Meadows	151B	18	8S	38E	5400	3-3	27.5	8.3	3.6	15.6	10	10.9
Gold Center	249	21	9S	36E	5340	2-28	32.9	11.8	9.0	-	8	11.0
Goodrich Lake	157	34&35	8S	38E	6775	2-27	90.0	32.8	28.3	-	1	28.3
IMNAHA RIVER												
Aneroid Lake No. 1	183	16	4S	45E	7480	2-28	85.4	29.1	32.1	36.7	4	26.3
Aneroid Lake No. 2	183A	16	4S	45E	7000	2-28	68.4	24.5	25.3	28.5	4	20.2
Coverdale	171	22	5S	47E	4250	2-25	33.1	10.4	4.5	17.4	3	9.1
GRANDE RONDE RIVER												
Aneroid Lake No. 1	183	16	4S	45E	7480	2-28	85.4	29.1	32.1	36.7	4	26.3
Aneroid Lake No. 2	183A	16	4S	45E	7000	2-28	68.4	24.5	25.3	28.5	4	20.2
Anthony Lake	155	18	7S	37E	7125	No Report			28.8	31.8	8	22.7
Beaver Reservoir	188	8	5S	37E	5340	2-28	36.8	10.7	13.7*	12.8	9	10.4
Meacham	221	24&25	1S	35E	4300	3-1	28.4	9.3	3.0	14.3	11	8.8
Moss Spring	186A	28	3S	41E	5850	2-27	78.7	26.4	19.0	24.1	9	19.3
Tollgate	212	32	4N	38E	5070	3-1	77.4	28.6	19.4	35.5	9	22.7

*Telegraphic

OREGON SNOW SURVEYS, MARCH, 1948

DRAINAGE BASIN and SNOW COURSE	LOCATION					SNOW COVER MEASUREMENTS						
								Water Content (In.)			Past Record	
								Same Approx. Date				
	Number or State	Sec.	Twp.	Range	Elev.	Date of Survey	Snow Depth (In.)	1948	1947	1946	Years of Record	Av. Water Content (Inches)
LOWER COLUMBIA DRAINAGE												
WALLA WALLA RIVER												
Tollgate	212	32	4N	38E	5070	3-1	77.4	28.6	19.4	35.5	9	22.7
UMATILLA RIVER												
Emigrant Springs	222	29	1N	35E	3925	3-1	20.5	8.0	0.2	12.7	11	6.6
Lucky Strike	223	28	3S	32E	5050	3-2	40.6	11.6	9.9	14.6	9	11.1
Meacham	221	24&25	1S	35E	4300	3-1	28.4	9.3	3.0	14.3	11	8.8
Tollgate	212	32	4N	38E	5070	3-1	77.4	28.6	19.4	35.5	9	22.7
WILLOW CREEK												
Arbuckle Mountain	241	33	4S	29E	5400	No Report			5.9	14.8	7	9.9
JOHN DAY RIVER												
Arbuckle Mountain	241	33	4S	29E	5400	No Report			5.9	14.8	7	9.9
Beech Creek Summit	246A	4	12S	30E	4800	2-26	11.8	4.2	0.4	6.8	11	6.0
Blue Mountain Springs	133	21	15S	35E	5900	2-26	36.7	11.3	10.4	19.6	12	14.6
Blue Mountain Summit	141	6	12S	36E	5098	2-27	25.3	8.1	5.2	12.3	12	8.4
Gold Center	249	21	9S	36E	5340	2-28	32.9	11.8	9.0	-	8	11.0
Izee Summit	964	28	16S	29E	5293	2-28	24.1	7.1	3.2	9.7	12	7.9
Olive Lake	245	14	9S	33½E	6000	2-25	61.6	25.9	16.7	22.2	12	15.2
Snow Mountain	965	1	19S	26E	6300	2-24	39.5	11.1	11.1	16.2	4	10.7
Starr Ridge	247B	20	15S	31E	5150	2-27	12.8	3.7	1.6	8.3	12	5.6
HOOD RIVER												
Tilly Jane-Mt. Hood	432	15	2S	9E	6000	2-29	82.6	31.2	New Snow Course			

OREGON SNOW SURVEYS, MARCH, 1948

DRAINAGE BASIN and SNOW COURSE	LOCATION					SNOW COVER MEASUREMENTS						
								Water Content (In.)			Past Record	
	Number or State	Sec.	Twp.	Range	Elev.	Date of Survey	Snow Depth (In.)	1948	Same Approx. Date 1947	Same Approx. Date 1946	Years of Record	Av. Water Content (Inches)
DESCHUTES RIVER												
Crescent Lake	525	11	24S	6E	4760	3-1	18.5	8.2	-	-	-	-
Cascade Summit	321	7	23S	6E	4880	3-1	66.0	24.8	-	40.5	3	23.0
Clear Lake	361	29	4S	9E	3500	2-28	31.7	10.1	4.5[c]	15.7	6	7.1
Hogg Pass	351	24	13S	7½E	4755	2-27	96.6	34.2	30.3	52.4	7	31.7
Marks Creek	344	25	12S	19E	4540	2-26	8.6	3.0	0.0	6.0	10	4.4
Ochoco Meadows	341	21	13S	20E	5200	2-28	31.1	9.1	3.2	14.6	12	9.1
Rock Creek	362	1	4S	10E	4200	No	Report		9.2	17.7	2	13.4
Snow Mountain	965	1	19S	26E	6300	2-24	39.5	11.1	11.1	16.2	4	10.7
Tamarack	342	8	15S	25E	4800	2-27	15.9	4.7	1.5	9.8	5	5.3
SANDY RIVER												
Phlox Point-Mt. Hood	452	6	3S	9E	5600	3-3	141.5	53.8	58.3[b]	76.0	10	45.0
Still Creek	451	25	3S	8½E	3700	3-1	52.1	19.7	12.2	33.7	10	15.8
CLACKAMAS RIVER												
Clackamas Lake	592	35	5S	8½E	3400	3-1	28.5	9.5	-	15.8	7	11.1
Peavine Ridge	591	14&15	6S	7E	3500	3-2	37.6	13.0	8.5	19.5	10	12.3
WILLAMETTE RIVER												
Breitenbush	551	21	9S	7E	2325	2-28	8.9	3.3	4.4[c]	5.0	6	2.1
Cascade Summit	321	7	23S	6E	4880	3-1	66.0	24.8	-	40.5	3	23.0
Champion	522	12	23S	1E	4500	2-29	53.1	19.6	5.8	35.2	9	18.0
Hogg Pass	351	24	13S	7½E	4755	2-27	96.6	34.2	30.3	52.4	7	31.7
Marion Forks	553	28	11S	7E	2730	2-27	27.0	9.8	7.6	17.4	7	8.5
Santiam Junction	552	14	13S	7E	3990	2-27	51.6	19.5	12.5	32.8	7	15.8

b - March 11

c - February 22

OREGON SNOW SURVEYS, MARCH, 1948

DRAINAGE BASIN and SNOW COURSE	LOCATION					SNOW COVER MEASUREMENTS						
								Water Content (In.)			Past Record	
								Same Approx. Date				
	Number or State	Sec.	Twp.	Range	Elev.	Date of Survey	Snow Depth (In.)	1948	1947	1946	Years of Record	Av. Water Content (Inches
INTERIOR DRAINAGE												
SILVER LAKE												
Silver Creek	942	25&26	29S	13E	4900	2-28	Trace	Trace	0.0	4.1	8	3.0
CHEWAUCAN RIVER												
Mill Creek	922	1	34S	17E	6200	2-26	10.1	2.9	3.9	9.6	9	6.4
HARNEY BASIN												
Deer Creek	973	17	36S	26E	6670	2-24	9.1	3.1	0.1	8.1	7	6.5
Hart Mountain	971	1	36S	25E	6350	2-26	T	T	0.0	0.6	8	3.2
Idylwild Camp	961A	33	20S	31E	5200	2-28	9.5	3.2	1.9	8.6	12	6.2
Izee Summit	964	28	16S	29E	5293	2-28	24.1	7.1	3.2	9.7	12	7.9
Rock Spring	134	23	18S	32E	5100	2-28	12.8	4.1	2.0	8.0	12	6.6
Snow Mountain	965	1	19S	26E	6300	2-24	39.5	11.1	11.1	16.2	4	10.7
Starr Ridge	247B	20	15S	31E	5150	2-27	12.8	3.7	1.6	8.3	12	5.6
WARNER LAKE												
Camas Creek	911A	5	39S	21E	5720	3-1	13.2	4.6	3.0	13.0	4	8.1
GUANO LAKE												
Bald Mountain	Nev.	17	45N	21E	6720	3-1	Trace	Trace	0.6	3.1	8	4.1
Guano Creek	972	13	36S	25E	6480	2-26	4.4	1.2	0.7	7.7	7	6.4
WEST COAST DRAINAGE												
UMPQUA RIVER												
Champion	522	12	23S	1E	4500	2-29	53.1	19.6	5.8	35.2	9	18.0
Diamond Lake	743	29	27S	6E	5315	2-29	60.0	21.9	10.1	31.8	19	15.2

OREGON SNOW SURVEYS, MARCH, 1948

DRAINAGE BASIN and SNOW COURSE	LOCATION					SNOW COVER MEASUREMENTS						
								Water Content (In.)			Past Record	
									Same Approx. Date			
	Number or State	Sec.	Twp.	Range	Elev.	Date of Survey	Snow Depth (In.)	1948	1947	1946	Years of Record	Av. Water Content (Inches)
ROGUE RIVER												
Althouse	7216	17	41S	7W	4400	3-1	2.0	0.5	0.0	5.0	9	4.3
Annie Spring	831	19	31S	6E	6018	2-28	90.2	33.2	29.8	61.2	14	35.8
Big Red Mountain	729	31	40S	1W	6500	2-28	48.3	12.2	-	-	-	-
Billie Creek Divide	722	30	36S	5E	5300	2-27	46.7	20.2	12.1	29.9	16	21.2
Fish Lake	725	3	37S	4E	4865	2-28	21.1	7.8	4.0	16.8	13	11.9
Grayback Peak	727	9	40S	5W	6000	3-2	29.6	10.3	4.0	20.4	6	14.8
Hobart Lake	7221	17	40S	3E	5010	2-25	4.2	1.2	New Snow Course			
Hyatt Prairie Reser.	723	15	39S	3E	4900	2-25	19.8	6.3	2.6	13.3	15	9.7
Little Red Mountain	7210	25	40S	2W	6500	2-27	34.3	12.6	-	-	-	-
Park Headquarters	838	8	31S	6E	6450	2-28	111.2	37.0	39.6	66.4	4	50.1
Scragg Mountain(Calif)	7220	9	47N	10W	6200	2-29	32.0	13.2	13.4	-	6	20.1
Silver Burn	7219	30	30S	4E	3720	2-28	23.5	8.0	1.5	17.4	11	9.4
Siskiyou Summit	728	17	40S	2E	4630	2-28	5.2	1.6	0.0	8.2	12	5.6
South Fork Canal	7218	12	33S	3E	3500	2-28	3.4	0.6	0.0	4.0	11	3.4
Wagner Butte	7213	1	40S	1W	6900	2-26	38.6	13.1	9.2	14.9	10	13.3
Whaleback	7217	3	31S	2E	5140	3-2	74.4	24.8	-	-	-	-
KLAMATH LAKE BASIN												
Annie Spring	831	19	31S	6E	6018	2-28	90.2	33.2	29.8	61.2	14	35.8
Beatty 2/		22	36S	12E	4300	No Report		-	0.0	0.3	21	0.2
Billie Creek Divide	722	30	36S	5E	5300	2-27	46.7	20.2	12.1	29.9	16	21.2
Bly 101 Ranch 2/		22	35S	14E	4800	No Report			0.0	0.4	21	1.8
Chemult No. 1	834	21	27S	8E	4760	3-3	17.5	5.6	3.3	17.6	11	10.2
Chiloquin 2/		34	34S	7E	4187	2-29	0.0	0.0	0.0	0.9	18	1.5

2/ Water content determined by melting one measured sample (The California Oregon Power Company's Station).

OREGON SNOW SURVEYS, MARCH, 1948

DRAINAGE BASIN and SNOW COURSE	LOCATION					SNOW COVER MEASUREMENTS						
								Water Content (In.)			Past Record	
	Number or State	Sec.	Twp.	Range	Elev.	Date of Survey	Snow Depth (In.)	1948	Same Approx. Date 1947	1946	Years of Record	Av. Water Content (Inches)
KLAMATH LAKE BASIN (Cont'd.)												
Crowder Flat (Calif.)		30	47N	11E	5200	2-29	T	T	0.0	5.4	7	3.4
Crystal 2/		26	34S	6E	4200	2-29	13.0	6.5	0.0	11.0	18	8.7
Fort Klamath 2/		22	33S	7½E	4150	2-29	2.5	0.5	0.0	3.3	21	4.0
Harriman Lodge 2/		3	36S	6E	4200	2-29	0.0	0.0	0.0	4.6	21	4.0
Hyatt Prairie Reserv.	723	15	39S	3E	4900	2-25	19.8	6.3	2.6	13.3	15	9.7
Kirk 2/		1	33S	7E	4533	2-29	3.0	1.0	Trace	11.8	20	6.3
Lake of the Woods #1	835	11	37S	5E	4960	2-29	17.2	4.2	2.1	12.7	11	7.8
Park Headquarters	838	8	31S	6E	6450	2-28	111.2	37.0	39.6	66.4	4	50.1
Quartz Mountain	811	2	38S	16E	5320	2-29	1.0	0.2	0.0	11.1	9	5.9
Quartz Mountain 2/		33	37S	16E	5504	2-29	9.0	3.0	0.0	9.0	17	6.8
Summer Rim	841	15	33S	16E	7200	2-25	30.3	8.3	9.8	-	8	12.7
Sun Mountain	836	22	32S	7½E	5350	3-1	45.5	14.4	15.4	39.0	10	23.5
Yamsey 2/		20	31S	11E	4600	2-29	0.0	0.0	0.0	6.2	19	2.3
GOOSE LAKE BASIN												
Camas Creek	911A	5	39S	21E	5720	3-1	13.2	4.6	3.0	13.0	4	8.1
Quartz Mountain	811	2	38S	16E	5320	2-29	1.0	0.2	0.0	11.1	9	5.9
Quartz Mountain 2/		33	37S	16E	5504	2-29	9.0	3.0	0.0	9.0	17	6.8

2/ Water content determined by melting one measured sample (The California Oregon Power Company's Station).

SNOW SURVEY DATA RECEIVED TOO LATE FOR PUBLICATION IN FEBRUARY 1 REPORT

OREGON SNOW SURVEYS, FEBRUARY, 1948

DRAINAGE BASIN and SNOW COURSE	LOCATION					SNOW COVER MEASUREMENTS						
								Water Content (In.) Same Approx. Date			Past Record	
	Number or State	Sec.	Twp.	Range	Elev.	Date of Survey	Snow Depth (In.)	1948	1947	1946	Years of Record	Av. Water Content (Inches)
ROGUE RIVER												
Hobart Lake	7221	17	40S	3E	5010	2-5	3.0	0.4			New Snow Course	
HOOD RIVER												
Greenpoint Res.	433	Location Data Delayed				2-3	19.7	7.4			New Snow Course	
Red Hill	434	"		"		2-8	60.0	23.4			New Snow Course	

The following organizations cooperate in the Oregon snow survey work:

STATE
- Idaho Cooperative Snow Surveys
- Nevada Cooperative Snow Surveys
- Oregon Agricultural Experiment Station
- Oregon State Engineer and corps of State Watermasters
- Oregon State Highway Engineers

FEDERAL
- Department of Agriculture
  - Forest Service
  - Soil Conservation Service
- Department of Commerce
  - Weather Bureau
- Department of the Interior
  - Bonneville Power Administration
  - Bureau of Reclamation
  - Fish and Wildlife Service
  - Geological Survey
  - Indian Service
  - National Park Service
- War Department
  - Army Engineer Corps

PUBLIC UTILITIES
- California-Pacific Utilities Company
- Portland General Electric Company
- The California Oregon Power Company

MUNICIPALITIES
- City of Baker
- City of Corvallis
- City of LaGrande
- City of The Dalles

IRRIGATION DISTRICTS
- Associated Ditch Companies
- Central Oregon Irrigation District
- Deschutes County Municipal Improvement District
- East Fork Irrigation District
- Grants Pass Irrigation District
- Jordan Valley Irrigation District
- Lakeview Water Users Incorporated
- Medford Irrigation District
- Ochoco Irrigation District
- Rogue River Irrigation District
- Talent Irrigation District
- Vale-Oregon Irrigation District
- Warmsprings Irrigation District

PRIVATE ORGANIZATIONS
- Amalgamated Sugar Company
- South Wasco Soil Conservation District
- The Crag Rats